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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,306	03/02/2005	Dolf Henricus Jozef Van Casteren	NL 020860	3591

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EXAMINER	
A, MINH D	

ART UNIT	PAPER NUMBER
2821	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,306	VAN CASTEREN, DOLF HENRICUS JOZEF	
	Examiner	Art Unit	
	Minh D. A	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is a response to the Applicants' filing on 9/28/07. In virtue of this filing, claims 1-7 and 9-15 are currently presented in the instant application.

Drawings Unaccepted

2. The drawings submitted on 3/2/05 are unaccepted.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show, for example, the limitations recited in independent claim 1, 4 and 6 "wherein the current-determining circuit comprises **a first current sensing circuit** for sensing the current in a first position between the rail and the output node and **a second current sensing circuit** for sensing the current in a second position between **the output node and ground** as described in the specification(note that, the sensing circuit should have " (sensor or detector or measure) current and should have a controller for (sensing or detecting or measuring the current) in a first and second position. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several

views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 4, 6-7 are rejected under 35 U.S.C. 102(a) as being anticipated by Ito (U.S. Patent No: 6, 437, 519).

Regarding claim 1, Ito discloses an electronic ballast for operating a gas discharge lamp, comprising: a switch-mode power supply(driver circuit as show in figure 1) for supplying power to the discharge lamp(6), said switch-mode power supply circuit(drive circuit) comprising a half-bridge(first switch (SW1) and second switch (SW2) commutating forward converter(DC power supply having a two DC-DC converter(3A and 3B) with at least a rail line(first DC-DC converter is connected to line voltage and second DC-DC converter is connected to second line voltage) for supplying

a rail voltage, a first switching(SW1) having a control terminal and switching terminals, a second switching element(SW2) having a further control terminal and further switching terminals, and an output node(A) between said first and second switching elements for supplying a converter current to the lamp(6); a current-determining circuit(note that, the elements (7A and 7B) can be either detection current or detection voltage, col.4, lines 23-35) for providing a signal representative of the converter current, wherein the current determining circuit (7A and 7B) is not connected to the control terminal or the further control terminal; wherein the current-determining circuit(7A and 7B) comprises a first current sensing circuit(7A) for sensing the current in a first position between the rail and the output node(A) and a second current sensing circuit(7B) for sensing the current in a second position between the output node(A) and ground. See figures 1-2, col.2, lines 58-67 to col.4, lines 1-59.

Regarding claim 4, Ito discloses a device for determining the current supplied by a commutating forward converter to a discharge lamp, which converter(3A and 3B) can be connected to a rail line for supplying a rail voltage(see the converters(3A and 3B) are connected the line voltage as show in figure 1) and comprises a first switching element(SW1) having a control terminal and switching terminals, a second switching element(SW2), and an output node(A) between said switching elements for supplying said current to the discharge lamp(6), the device comprising a first current sensing circuit(7A) (note that, the elements (7A and 7B) can be either detection current circuit or detection voltage circuit, col.4, lines 23-35) for sensing the current in a first position between the rail (line voltage) and the output node(A) and a second current sensing

circuit(7B) (note that, the elements (7A and 7B) can be either detection current or detection voltage, col.4, lines 23-35) for sensing the current in a second position between the output node(A) and ground, wherein the first current sensing circuit(7A) is not connected to the control terminal. See figures 1-2, col.2, lines 58-67 to col.4, lines 1-59.

Regarding claim 6, Ito discloses a converter current supplied by a commutating forward converter to a gas discharge lamp(6), the converter (3A and 3B) including at least a rail line(line voltages) for supplying a rail voltage, a first switching element (SW1) having a control terminal and switching terminals, a second switching element(SW2), and an output node(A) between said switching elements for supplying the converter current to the gas discharge lamp(6), the method comprising the act of: a detection circuit (the elements (7A and 7B) can be either detection current or detection voltage, col.4, lines 23-35) for sensing a first current in the converter(DC-DC(3A)) in a first position between the rail line and the output node(A) and providing a first output signal a current sensor which is connected to one of the switching terminals and is not connected to the control terminal; a element (7B) for sensing a second current in the converter in a second position between the output node(A) and ground and providing a second output signal; adding the first output signal (first output of (3A)) and the second output (second output of (3B) so as to provide a third output signal(see the node between of output of (3A and 3B) representative of the converter current. See figures 1-2, col.2, lines 58-67 to col.4, lines 1-59.

Regarding claim 7, Ito discloses, figure 1, wherein the first output signal is the first current measured in the first position, and the second output signal is the second current measured in the second position, and wherein the third output signal is the sum of the first current measured in the first position and the simultaneously measured second current in the second position.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ito (U.S. Patent No: 6, 437, 519) in view of Ito (U.S Patent No. 6, 366, 030).

Regarding claims 2 and 5, Ito (519) discloses wherein the first sensing circuit and second sensing circuit as discloses claim 1 above, but Ito (519) does not clearly discloses that, the first sensing circuit comprises a first current transformer having a primary winding connected to said first position and the second sensing circuit comprises a second current transformer having a primary winding connected to said second position, the secondary windings of the first and second current transformers being connected in series for providing a combined signal representative of the converter current.

Ito (030) discloses, in figure 2B, that, a first current transformer (T1) having a primary winding(T1p) connected to said first position(ta) and a second current

transformer(T2) having a primary winding(T2p) connected to said second position(ground), the secondary windings(T1p and T2p) of the first and second current transformers(T1 and T2) being connected in series for providing a combined signal representative of the converter current.

It would have thus been obvious to one having ordinary skill in the art to include the above the first current transformer (T1) having a primary winding(T1p) connected to said first position(ta) and the second current transformer(T2) having the primary winding(T2p) connected to said second position(ground), the secondary windings(T1p and T2p) of the first and second current transformers(T1 and T2) being connected in series for providing a combined signal representative of the converter current disclosed in Reference of Ito(030) in the discharge lamp of Reference of Ito(519) to achieve the claimed invention. As disclosed in Reference of Ito(030), the motivation for the combination would be obtained the first transformer and the second transformer (T1 and T2) is connected in series for providing a combined signal representative of the converter current and would be obtained the first and the second voltage to the first line voltage and second line voltage.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Ito (U.S. Patent No: 6, 437, 519) in view of Ito (U.S Patent No. 6, 366, 030) as applied to claims 1 and 2 above, and further in view of Qian (U.S Patent No. 6, 107 753).

Regarding claim 3, the combination Ito(519) and Ito(030) obviously disclose all of the claimed limitations, except a gate driving circuit connected to the gates of the first switching element and the second switching element .

Qian discloses, in figure 1, that, a gate driving circuit connected to the gates of the first switching element and the second switching element.

It would have thus been obvious to one having ordinary skill in the art to include the above the gate driving circuit connected to the gates of the first switching element and the second switching element disclosed in Reference of Qian in the discharge lamp of References of Ito(519) and Ito(030) to achieve the claimed invention. As disclosed in Reference of Qian, the motivation for the combination would be obtained the gate driving circuit connected to the gates of the first switching element and the second switching element and would be obtained the sensor circuits to couple the gates of the first and second switching elements for sensing a voltage to discharge lamp.

10. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ito (U.S. Patent No: 6, 437, 519) in view of Qian (U.S Patent No. 6, 107 753).

Regarding claims 9, 11, 13-14, Ito discloses wherein the first switching element (SW1) and the first rail of the converter and the second switching element (SW2) and the second rail of the converter and current sensor.

However, Ito does not teach that, wherein the first switching element is connected between one of the switching terminals, and wherein the second switching element is connected between one of the further switching terminals, the second switching element not being connected to the control terminal or the further control terminal.

Qian discloses, in figure 1, that, the first switching element (S1) is connected between one of the switching terminals, and wherein the second switching element(S2)

is connected between one of the further switching terminals, the second switching element(s2) not being connected to the control terminal or the further control terminal.

It would have thus been obvious to one having ordinary skill in the art to include the above the first switching element (S1) is connected between one of the switching terminals, and wherein the second switching element (S2) is connected between one of the further switching terminals, the second switching element(s2) not being connected to the control terminal or the further control terminal disclosed in Reference of Qian in the discharge lamp of References of Ito(519) to achieve the claimed invention. As disclosed in Reference of Qian, the motivation for the combination would be obtained the first switching element (S1) and the second switching element are connected between one of the switching terminals and the second switching element(s2) not being connected to the control terminal or the further control terminal and would be obtained the second switching element no being connected to the control terminal or the further control terminal for apply to another (sensor or detector) device for (sensing or detecting) current or voltage.

Regarding claims 10, 12 and 15, Ito and Qian inherently disclose wherein the first current sensing circuit and the second current sensing circuit have substantially identical low-frequency responses, because the control terminals could be connected to another control device to monitor or adjust the frequency.

Response to Arguments

7. Applicant's arguments with respect to claims 1-7 and 9-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Citation of relevant prior art

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Xia et al (U.S. Patent No. 5,691,605) discloses an electrode ballast with interface circuitry for multiple dimming inputs.

Prior art Jayaraman et al (U.S. Patent No. 5,650,694) discloses a lamp controller with lamp status detection and safety circuitry.

Prior art Venkitasubrahamanian et al. (U.S. Patent No. 5,604,411) discloses an electronic ballast having a triac dimming filter with pre-conditioner offset control.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dieu A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 AM-2: 45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Owens Douglas W can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner

Minh A

Art Unit 2821

11/28/07

Douglas W. Owens 12/8/07

DOUGLAS W. OWENS
SUPERVISORY PATENT EXAMINER